

Accelerator Performance (11/4-11/10)



- Accelerator Studies (5 shifts)
- Initial Luminosity Record $3.67 \text{ E}31$
- Pbar stacking Record 13.0 mA/hr
- Tevatron Abort Kicker Pre-fire

Tevatron Studies



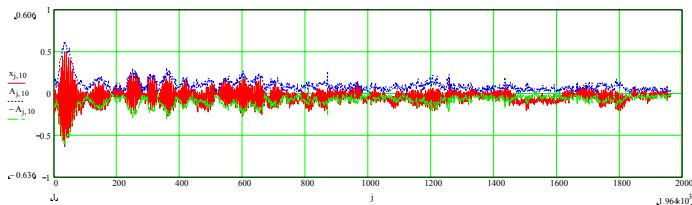
- Finish separator angle scan for B0 and D0 – EOS – no changes made
- TEL tune scan – EOS
- 150 GeV tune and chromaticity ramps at the inject pbar
- Local decoupling at D0 IP
 - No significant coupling at 150 from D0 IR triplets
 - Quench at low beta during studies -. Need additional time to finish
- New A1 optics
 - Good Beta match
 - Dispersion matched between Tev and MI
 - Still see round trip emittance growth for protons -> further investigation
- Measurement of head-tail instability

Tevatron Instabilities

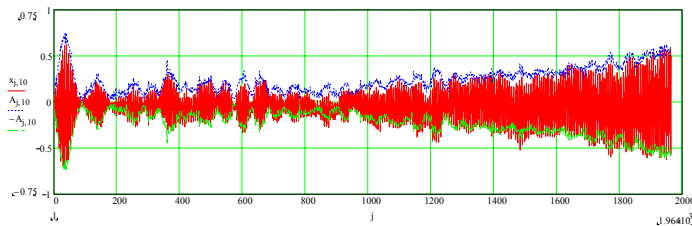


Developing of head-tail instability at different chromaticities for single coalesced proton bunch after injection into Tevatron

Longitudinal and transverse dampers OFF

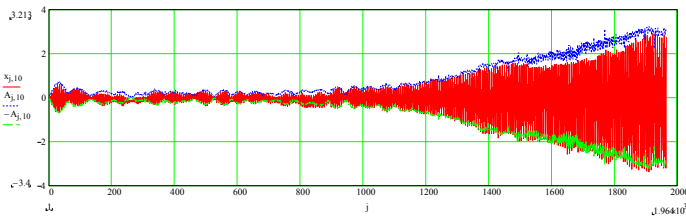


$$N \approx 2.6 \cdot 10^{11}, \xi_x \approx 8, \xi_y \approx 2, [\nu_x] = 0.5850, [\nu_y] = 0.5736$$



$$N \approx 2.6 \cdot 10^{11}, \xi_x \approx 6, \xi_y \approx 2, [\nu_x] = 0.5848, [\nu_y] = 0.5721$$

Fig.2 Developing of the head-tail instability with dipole longitudinal configuration



$$N \approx 2.6 \cdot 10^{11}, \xi_x \approx 6, \xi_y \approx -3, [\nu_x] = 0.5857, [\nu_y] = 0.5725$$

Fig.3 Developing of the head-tail instability with monopole longitudinal configuration.

Booster



- Measurement of vertical tune shift from wall current effects
 - Vertical tune is preferentially depressed due to smaller vertical aperture
- Previous vertical orbit moves have worked well to flatten orbit and reduce losses
 - Still additional moves are needed due to severe vertical aperture limitations



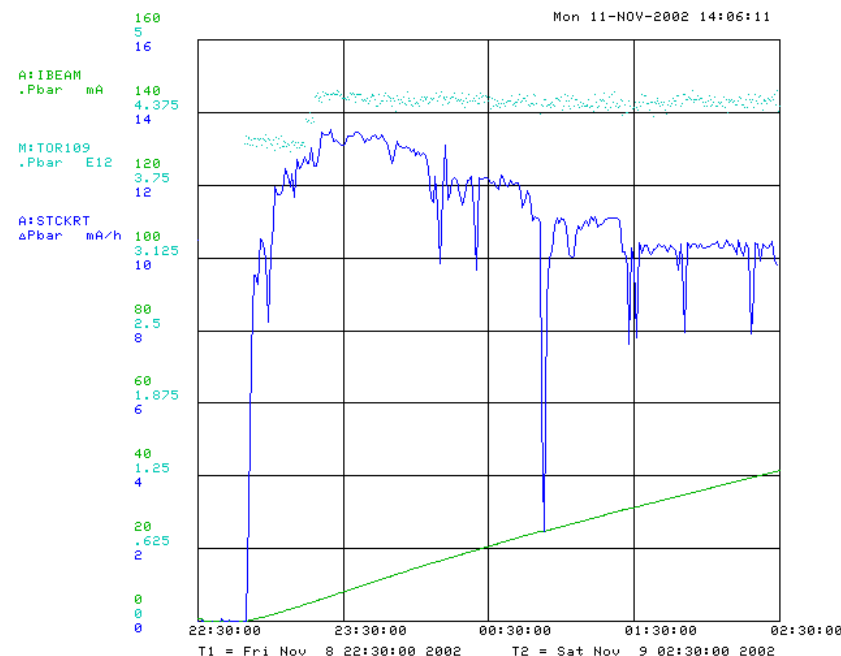
Dedicated Studies

- Reverse Protons
 - Measure Debuncher Transverse Aperture
 - Work upon instrumentation and diagnostics
- Pbar Momentum Spectra
 - Procedure to measure AP2+Debuncher aperture
 - Test AP2 momentum collimators
- 120 GeV Proton beam spot size on target
 - H sigma .215 mm -> .152 mm , Ver const .16 mm
- Debuncher Band 3 & 4 work
 - Access to fix and adjust systems
 - Characterize Debuncher momentum systems

Parasitic Studies

- Align Debuncher momentum system and RF system
- Measure Transverse admittance of AP2+Debuncher while stacking

Stacking Record 13.0 mA/hr

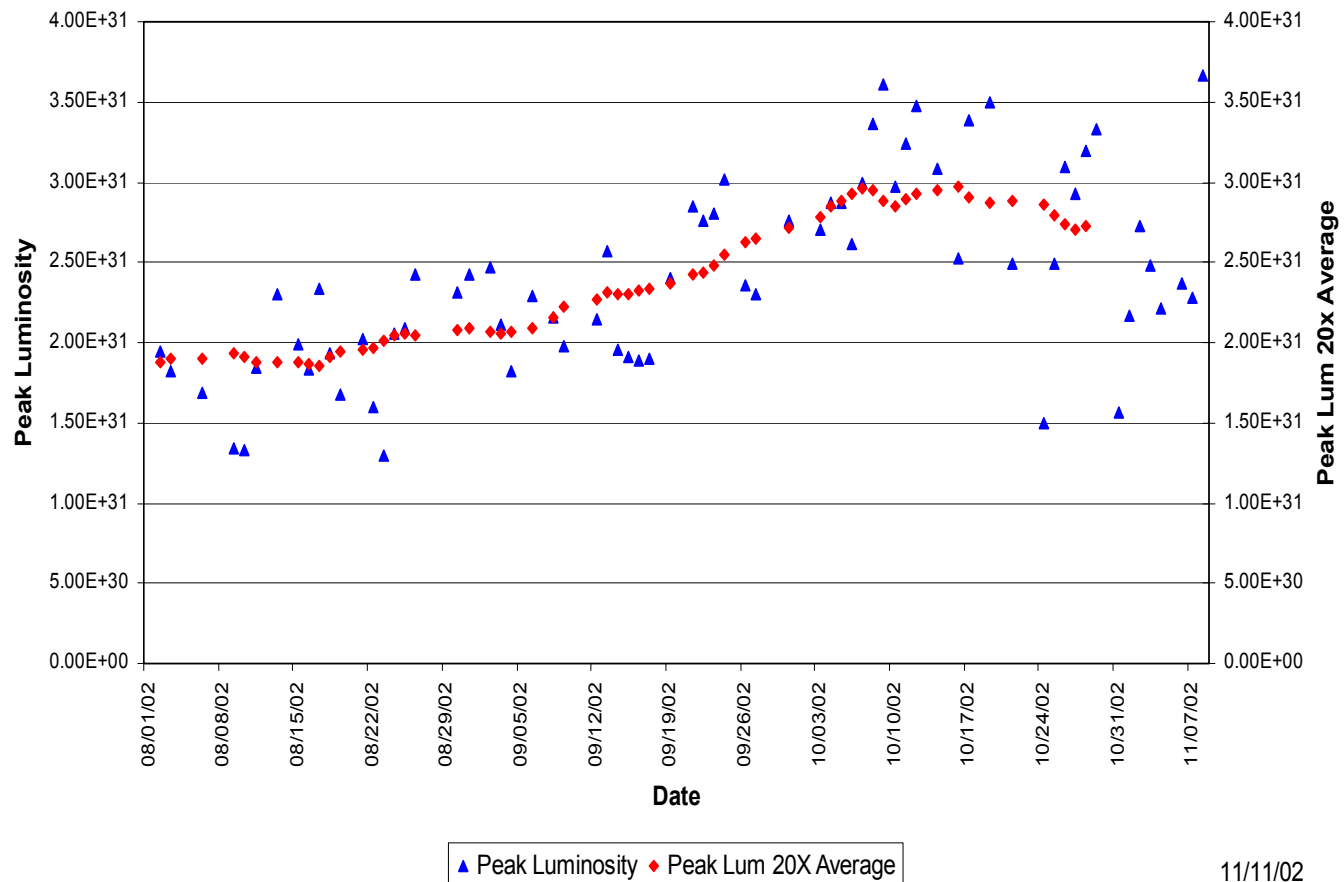


11/09/02

Peak Luminosity



Collider Run IIA Peak Luminosity

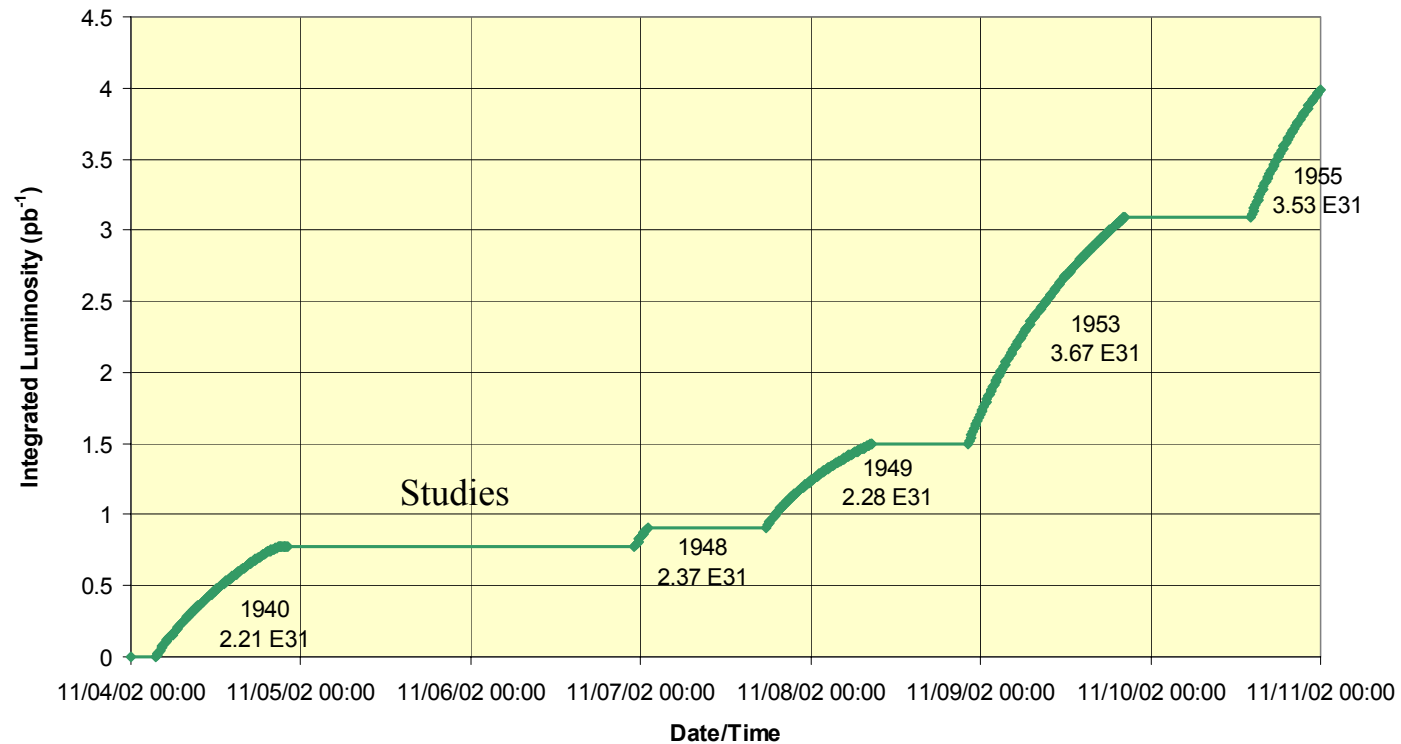


11/11/02

Integrated Luminosity for the Week



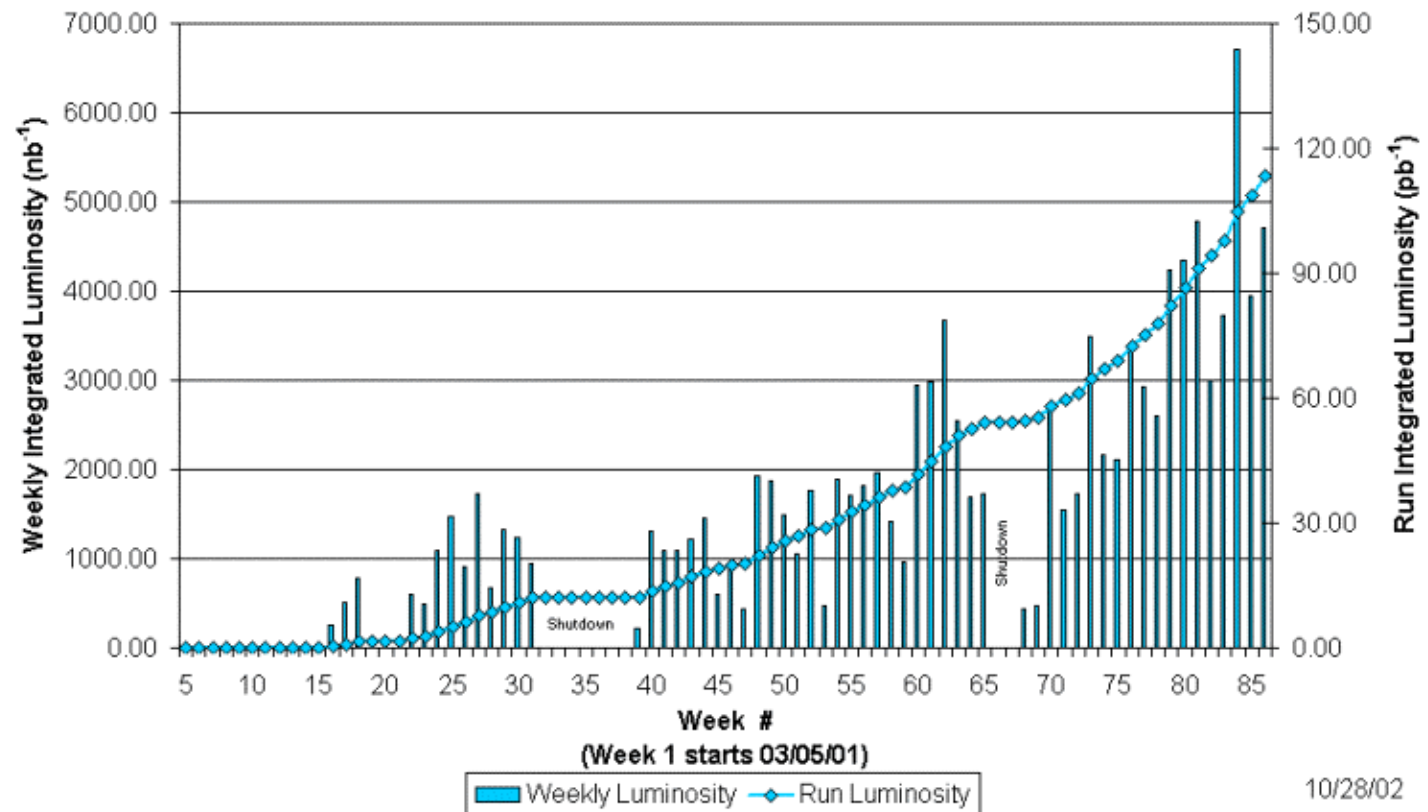
Integrated Luminosity for Week of 11/04/02



Integrated Luminosity



Collider Run IIA Integrated Luminosity



10/28/02

Beams Week in Review



Schedule for this Week



- Shot setup Monday Afternoon
- Terminate store Tuesday midday for 4 hours CDF Quiet time to diagnose Si Detector
- Shot setup Tuesday evening shift
- Stack 'n store remainder of week
- Shots to Recycler - off the bottom and small stack dedicated, *depending on Collider operation*

Longer-term schedule



- Week 11/18
 - Accelerator Studies (5 shifts)
 - Two shift access for installation on new MP02 power supply (potentially 11/20-21)
- Week 11/25
 - Stack 'n store